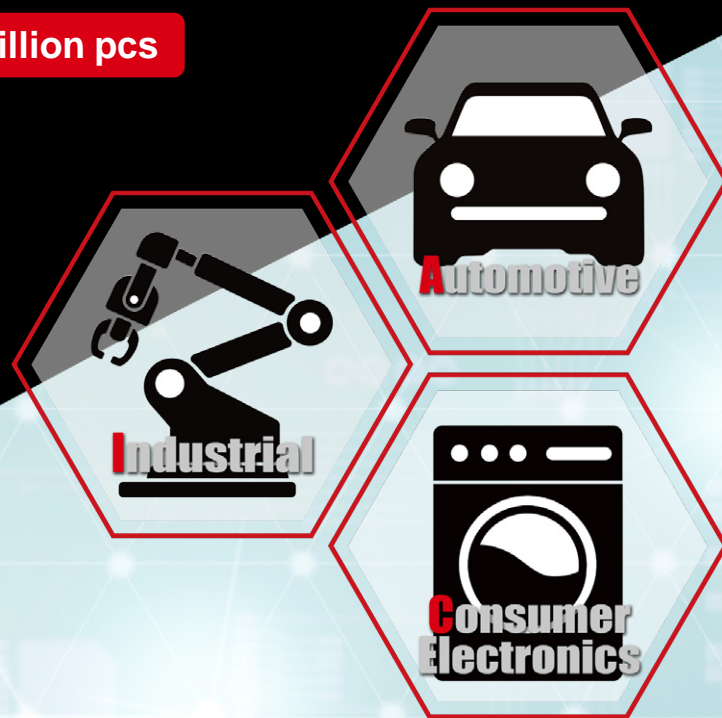


Reliable supply record with shipments totaling over 60 billion pcs

Small-Signal Discrete Devices Digital Transistors (Long-Selling Products)

DTA1xxxU3, DTC1xxxU3



Long-Selling Small-Signal Digital Transistors: DTA1xxxU3, DTC1xxxU3



Selling Points

Long-Term Supply*: 10 years

Cumulative Shipments: 700 million pcs

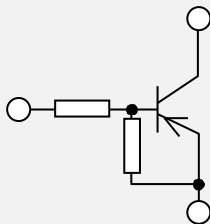
- The first company*¹ to develop digital transistors(transistors with built-in resistors), ROHM has been supplying them for many years
- Lots of lineup supports various applications
- We have more than sufficient capacity

*Supply period disclosed in ROHM's Product Longevity Program (As of July 2023)

*1: ROHM study

Features

■ Integrates resistors and a bipolar transistor in a single package



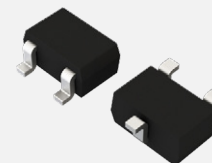
- **Contributes to a smaller mounting area and fewer design resources**
- **Built-in bias resistors make it possible to configure inverter circuits without external resistors on the input side**

■ Applications

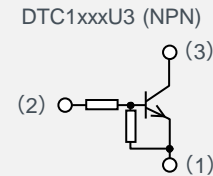
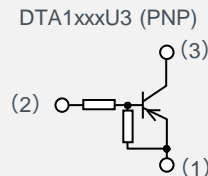
Inverter, driver, and interface circuits

■ Packages

SOT-323 (UMT3)
2.0mm×2.1mm t=0.9mm



■ Internal Circuit Diagram




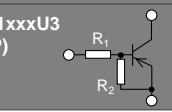

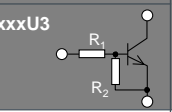
(1) GND(+) (Emitter) (2) IN (Base) (3) OUT (Collector)

Note: Packages in parenthesis () denotes ROHM's package type.

Long-Selling Small-Signal Digital Transistors: Specifications

■ Product Specifications: DTA1xxxU3, DTC1xxxU3 series

Click on the  icon to access the product page on ROHM's website.

Specifications	Part No.		Taping code	R ₁ [kΩ]	R ₂ [kΩ]	V _{CC} or V _{CBO} [V]	I _O [A]	V _{I(OFF)} [V]	V _{I(ON)} [V]	V _{O(ON)} [V]	I _I [mA]	I _{O(OFF)} [nA]	BV _{EBO} [V]	I _{CBO} [nA]	I _{EBO} [μA]		V _{CE(sat)} [mV]	Package [mm]
	 DTA1xxxU3 (PNP) 	 DTC1xxxU3 (NPN) 				Max	Max	Max	Min	Max	Max	Max	Min	Max	Min	Max	Max	
R ₁ =R ₂	DTA123EU3	DTC123EU3	T106	2.2	2.2	50	0.1	0.5	3	0.3	3.8	500	—	—	—	—	—	SOT-323 (UMT3) 2.0×2.1 t=0.9
	DTA143EU3	DTC143EU3	T106	4.7	4.7	50	0.1	0.5	3	0.3	1.8	500	—	—	—	—	—	
	DTA114EU3	DTC114EU3	T106	10	10	50	0.05	0.5	3	0.3	0.88	500	—	—	—	—	—	
	DTA124EU3	DTC124EU3	T106	22	22	50	0.03	0.5	3	0.3	0.36	500	—	—	—	—	—	
	DTA144EU3	DTC144EU3	T106	47	47	50	0.03	0.5	3	0.3	0.18	500	—	—	—	—	—	
	DTA115EU3	DTC115EU3	T106	100	100	50	0.02	0.5	3	0.3	0.15	500	—	—	—	—	—	
R ₁ ≠R ₂	DTA113ZU3	DTC113ZU3	T106	1	10	50	0.1	0.3	3	0.3	7.2	500	—	—	—	—	—	
	DTA123YU3	DTC123YU3	T106	2.2	10	50	0.1	0.3	3	0.3	3.8	500	—	—	—	—	—	
	DTA123JU3	DTC123JU3	T106	2.2	47	50	0.1	0.5	1.1	0.3	3.6	500	—	—	—	—	—	
	DTA143XU3	DTC143XU3	T106	4.7	10	50	0.1	0.3	2.5	0.3	1.8	500	—	—	—	—	—	
	DTA143ZU3	DTC143ZU3	T106	4.7	47	50	0.1	0.5	1.3	0.3	1.8	500	—	—	—	—	—	
	DTA114YU3	DTC114YU3	T106	10	47	50	0.07	0.3	1.4	0.3	0.88	500	—	—	—	—	—	
	DTA124XU3	DTC124XU3	T106	22	47	50	0.05	0.4	2.5	0.3	0.36	500	—	—	—	—	—	
R ₁ Alone	DTA143TU3	DTC143TU3	T106	4.7	—	50	0.1	—	—	—	—	—	5	500	—	500	300	
	DTA114TU3	DTC114TU3	T106	10	—	50	0.1	—	—	—	—	—	5	500	—	500	300	
R ₂ Alone	—	DTC114GU3	T106	—	10	50	0.1	—	—	—	—	—	5	500	300	580	300	
	—	DTC115GU3	T106	—	100	50	0.1	—	—	—	—	—	5	500	30	58	300	

Note1: The '-' is omitted for PNP types.

Note2: Packages in parenthesis () denotes ROHM's package type.

Additional Information Available on ROHM's Website

Learn the basics

Electronics Basics

► What is a transistor? [Digital Transistor](#)

Many products are listed in addition to long-selling products

► [ROHM Digital Transistors](#)

With shipments totaling over 60 billion pcs, ROHM's long-selling small-signal discrete devices have enjoyed a long history in the market and boast a top-tier track record in the industry. Stable supply and production ensure worry-free adoption even in applications with long life cycles.

Features

- **Production for over 5 years (with over 60 billion pcs shipped) results in among the industry leading supply record**

Production is achieved using high quality, high efficiency lines developed through continuous investment in production equipment and improvements in production technology

- **Stable production ensured through a robust BCM system**

Based on a vertical integration strategy (also incorporating external production) makes it possible to hedge against various risks

- **ROHM's Product Longevity Program ensures worry-free adoption**

Can be adopted for applications with long life cycles, including industrial equipment

*ROHM study (as of 2022)

ROHM's Long-Selling Small-Signal Discrete Devices

Switching Diodes

1SS400SM
1SS355VM

Schottky Barrier Diodes

RB521SM-xx
RB520SM-xx

Zener Diodes

EDZV series
UDZV series

Bipolar Transistors

2SA1576U3
2SC4081U3

Digital Transistors

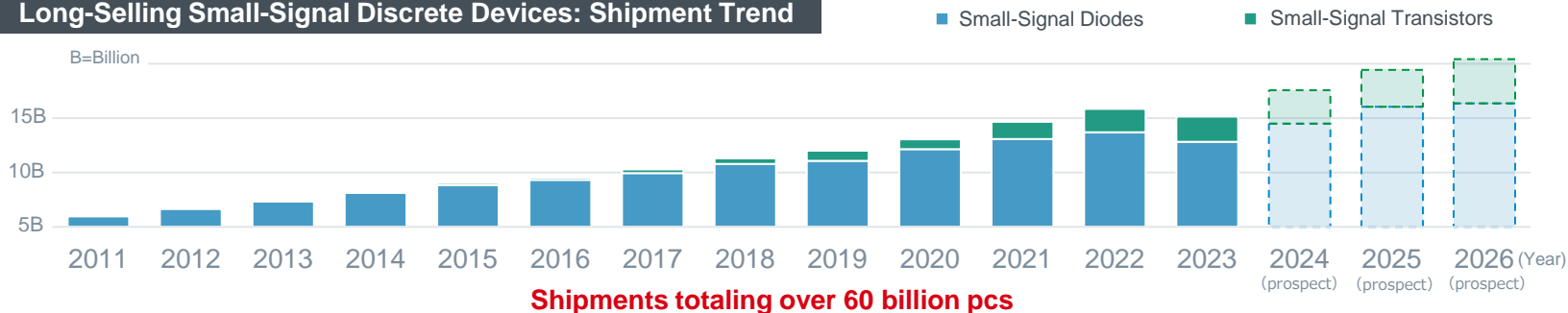
DTA1xxxU3
DTC1xxxU3

MOSFETs

RUM002N02
RSM002N06

Industry-Leading Supply Record with Total Shipments Exceeding 60 billion from Over 5 Years of Production ①

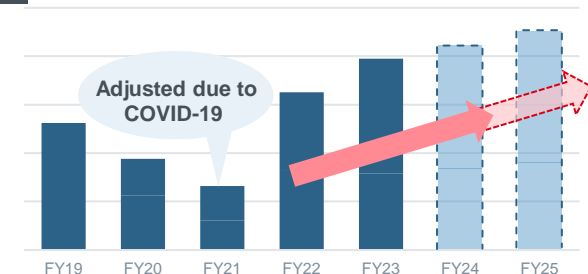
Long-Selling Small-Signal Discrete Devices: Shipment Trend



Continuing Investment in Production Facilities

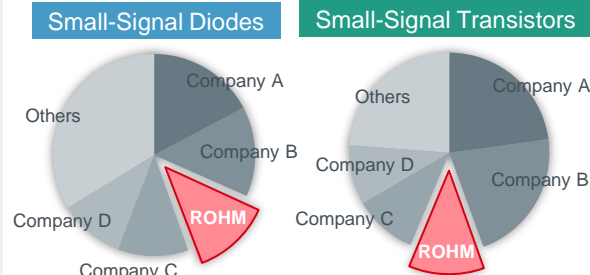


Trend in Capital Investments



Increased capacity through continued investment in equipment

W/W Share of Small-Signal Discrete Devices



Top 3 market share worldwide

*ROHM study (as of 2022)

Continued investment in production facilities allows ROHM to secure a top 3 market share within the industry by establishing a top-tier track record for shipments

Industry-Leading Supply Record with Total Shipments Exceeding 60 billion from Over 5 Years of Production ②

Reducing Waste by Improving Production Methods

*SOD-323FL (UMD2)
Reduction per unit product

Conventional Method:
Hoop Line

New Method:
Wide Line

Frame waste

reduced **70%***

Resin waste

reduced **69%***

Increasing frame usage efficiency significantly reduces waste

Unified Material Specifications

Terminal Treatment

Dip (Sn3Ag0.5Cu)

Plating (100% Sn)

Improves solder wettability during mounting, extending the recommended product storage period (1→5 years)

Resin

Halogen

Halogen free

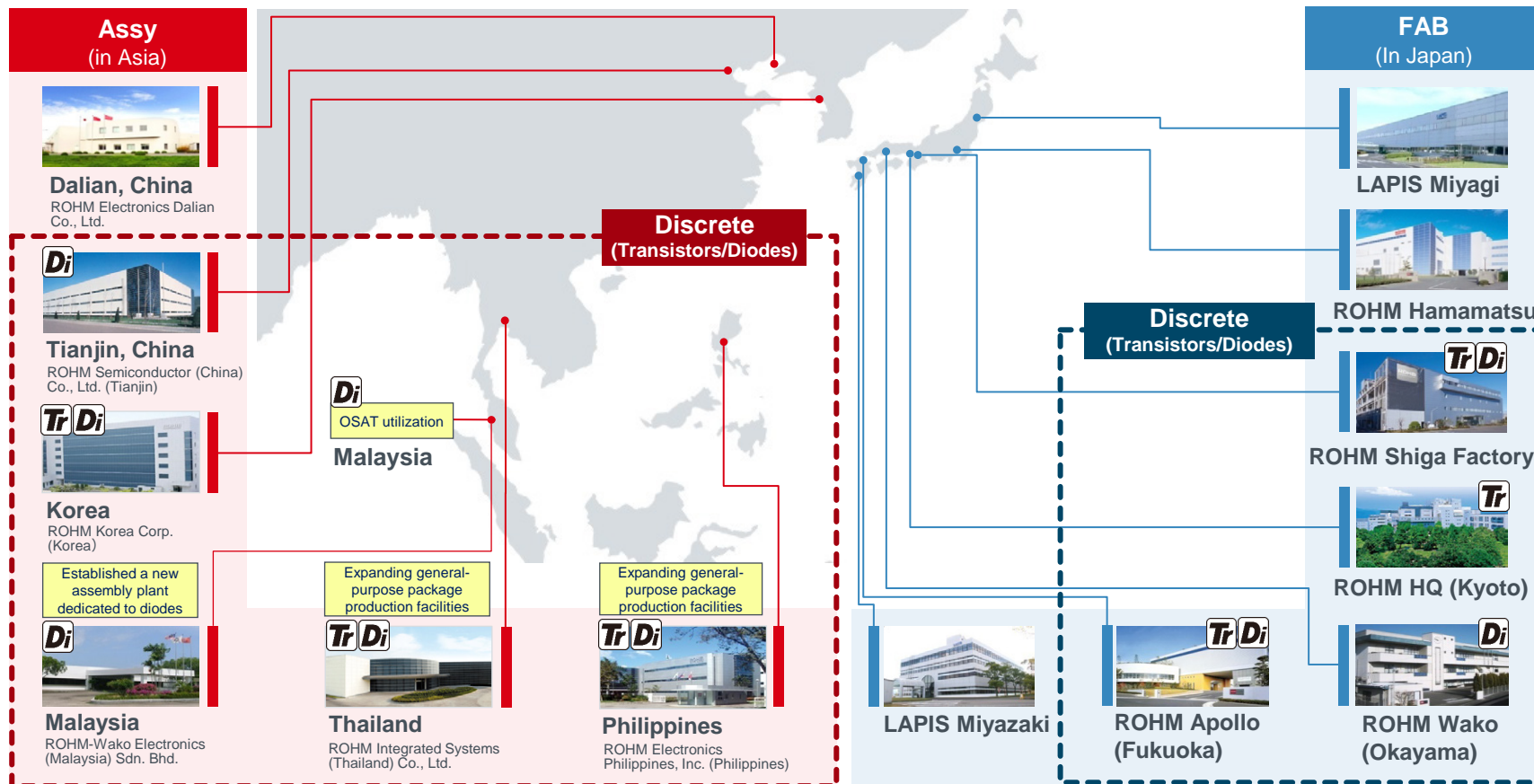
Eco-friendly products

SOT-323
(UMT3)

Note: Packages in parenthesis () denotes the ROHM package type.

Improved production technology allows us to achieve greater quality and manufacturing efficiency while minimizing environmental impact

Robust BCM System Ensures Stable Production



ROHM has established a robust BCM system that incorporates multiple production sites (including OSAT) based on a vertical integration strategy to hedge against various risks

Product Longevity Program (PLP)

A supply period of 10 to 20 years is established for products requiring long-term supply, with relevant information regarding supply status and estimated supply duration posted on ROHM's website.
Long-selling small discrete diodes and transistors are also eligible under the Product Longevity Program.

Small-Signal Discrete Devices (Long-Selling Products)

Product Category	Part Number	Features	Support Period (Year)
Switching Diodes	1SS355VM	High-speed 80V/100mA switching diode	10
Switching Diodes	1SS400SM	High-speed 80V/100mA switching diode	10
Zener Diodes	UDZV10B	200mW/10V SOD-323FL Zener diode	10
Zener Diodes	EDZV10B	150mW/10V SOD-523 Zener diode	10
Schottky Barrier Diodes	RB520SM-30	30V/200mA SOD-523 Schottky barrier diode	10
Schottky Barrier Diodes	RB521SM-30	30V/200mA SOD-523 Schottky barrier diode	10
Schottky Barrier Diodes	RB520SM-40	40V/200mA SOD-523 Schottky barrier diode	10
Schottky Barrier Diodes	RB521SM-40	40V/200mA SOD-523 Schottky barrier diode	10
Bipolar Transistors	2SC4081U3	NPN SOT-323 50V/150mA general small-signal amplification transistor	10
Bipolar Transistors	2SA1576U3	PNP SOT-323 -50V/-150mA general amplification transistor	10
Digital Transistors	DTC113ZU3	NPN SOT-323 R1#R2 digital transistor (with internal bias resistor)	10
Digital Transistors	DTA113ZU3	PNP SOT-323 R1#R2 digital transistor (with internal bias resistor)	10
12 to 150V MOSFETs	RUM002N02	1.2V drive type Nch MOSFET	10
12 to 150V MOSFETs	RSM002N06	2.5V drive type Nch MOSFET	10

As of July 2023

ROHM long-selling small-signal discrete devices can be confidently adopted in applications with long life cycles

Di Diodes

Switching Diodes

- ✓ Easily replace competitor products

Long-selling

1SS400SM, 1SS355VM

Schottky Barrier Diodes

- ✓ Development tailored to customer demands

Long-selling

RB521SM-xx, RB520SM-xx

Zener Diodes

- ✓ Lots of Vz lineup

Long-selling

EDZV/UDZV series

Tr Transistors

Bipolar Transistors

- ✓ Superior h_{FE} characteristics

Long-selling

2SA1576U3, 2SC4081U3

Digital Transistors

- ✓ Pioneered by ROHM

Long-selling

DTA1xxxU3/DTC1xxxU3 series

MOSFETs

- ✓ Compatible with low 1.2V drive

Long-selling

RUM002N02, RSM002N06

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